UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,826	02/05/2004	Tienteh Chen	200309805-1	8078

22879 7590 12/31/2007
HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
SHAH, MANISH S	

ART UNIT	PAPER NUMBER
2853	

NOTIFICATION DATE	DELIVERY MODE
12/31/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
mkraft@hp.com
ipa.mail@hp.com

Office Action Summary	Application No.	Applicant(s)	
	10/773,826	CHEN, TIENTEH	
	Examiner	Art Unit	
	Manish S. Shah	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 13-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 13-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/1/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-11 & 13-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wexler (# US 6497480) in view of Warner et al. (# US 6677007).

Wexler discloses:

- A media sheet, comprising:

a) a media substrate (column: 2, line: 20-25; column: 4, line: 40-55);

b) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates (ink retaining layer) (column: 2, line: 24-26); and

c) a UV protection layer (ink transporting) applied as a coating to the ink receiving layer, said UV protection layer including UV absorbing latex particulates (column: 2, line: 25-30) that are from 0.05 micrometer to 1 micrometer in size (column: 2, line: 45-50), and said UV protection layer formulated to allow an ink to at least partially pass there through and become deposited on the ink receiving layer (see Abstract).

• The ink receiving layer includes a binder for binding the hollow particulates (column: 3, line: 20-30).

• The UV protection layer includes a binder for binding UV absorbing latex particulates (column: 2, line: 59-65).

• The hollow particulate to hollow particulate binder ratio is from 95:5 to 50:50 by weight (column: 3, line: 53-65).

• The ink receiving layer is applied at from 5 g/m^2 to 40 g/m^2 (column: 3, line: 30-36).

• The UV absorbing latex particulates include at least one UV absorbing monomer, said UV absorbing monomer being an ethylenically unsaturated compound having a UV absorbing group covalently attached thereto, said UV absorbing latex particulates having a UV absorbing monomer to diluent monomer ratio from 100:0 to 10:90 by weight (column: 2, line: 64-67).

• The UV absorbing latex particulates are copolymers including at least one non-UV absorbing monomer (see Examples).

• The UV absorbing layer is applied at from 0.2 g/m^2 to 5 g/m^2 (see Examples).

• A system for preparing a fused ink-jet image, comprising:

a) a media sheet, including:

i) a media substrate (column: 4, line: 40-50);

ii) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates (ink retaining layer) (column: 2, line: 24-26); and

iii) a UV protection layer applied as a coating to the ink receiving layer, (column: 2, line: 25-30) said UV protection layer including UV absorbing latex particulates;

b) an ink-jet ink including a dye (column: 5, line: 15-30), said ink-jet ink configured for printing onto the media sheet, wherein upon printing, the ink-jet ink substantially passes through the UV protection layer and is taken within voids of the hollow particulates; and

c) a fusion system configured for fusing the UV protection layer and the ink receiving layer after printing of the ink-jet ink (see Abstract).

• The fusion system comprises a pair of rollers configured to apply heat and pressure to the media sheet after application of the ink-jet ink, thereby forming a fused ink-j et image (column: 5, line: 5-15).

• A method of preparing a fused ink-jet image, comprising:

a) ink-jetting an ink-jet ink onto a media sheet, said ink-jet ink including a dye (column:5, line: 15-30), and said media sheet including an ink receiving layer and a UV protection layer, said ink receiving layer including hollow particulates, and said UV protection layer including UV absorbing latex particulates, wherein said ink-jet ink at least partially passes through the UV protection layer and is received by the ink receiving layer (see Abstract; column: 2, line: 15-40); and

b) fusing the UV protection layer and the ink receiving layer after the ink-jetting step (column: 2, line: 30-40).

- The fusing step is by applying heat and pressure to the media sheet having the ink-jet ink printed thereon (column: 5, line: 5-15).

- The preliminary step of preparing the media sheet by applying the ink receiving layer on to the substrate, and subsequently applying the UV protection layer on to the ink receiving layer (see Examples; Abstract).

- The ink-jetting step includes allowing the ink-jet ink to fill voids within and between the hollow particulates (see Examples).

- The fusing step causes the UV protection layer and the ink receiving layer to form a film that at least partially insulates the ink-jet ink from the surrounding air (see Examples).

- The fusing step causes the UV protection layer to form a film that at least partially insulates the ink-jet ink from the UV light (column: 5, line: 1-15; see Examples).

- A media sheet, comprising:

a) a media substrate (column: 4, line: 40-55; see Abstract);

b) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates (see Abstract; column: 3, line: 20-40); and

c) a UV protection layer applied as a coating to the ink receiving layer, said UV protection layer including UV absorbing latex particulates and said UV protection

layer formulated to allow an ink to at least partially pass therethrough and become deposited on the ink receiving layer (see Abstract; column: 2, line: 20-65).

- A media sheet, comprising:

a) a media substrate (column: 4, line: 40-55);

b) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates (column: 3, line: 20-35); and

c) a UV protection layer applied as a coating to the ink receiving layer, said UV protection layer including UV absorbing latex particulates (column: 2, line: 44-65) and said UV protection layer formulated to allow an ink to at least partially pass therethrough and become deposited on the ink receiving layer (see Abstract).

- A media sheet, comprising:

a) a media substrate (column: 4, line: 40-55; see Abstract);

b) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates bound together with a binder (column: 3, line: 20-35), wherein the hollow particulate to binder ratio is from 95:5 to 50:50 by weight (see Examples; column: 3, line: 54-65); and

c) a UV protection layer applied as a coating to the ink receiving layer, said UV protection layer including UV absorbing latex particulates (column: 2, line: 44-65) and said UV protection layer formulated to allow an ink to at least partially pass therethrough and become deposited on the ink receiving layer (see Abstract).

- A media sheet, comprising:

a) a media substrate (column: 4, line: 40-55; see Abstract);

b) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates (see Abstract; column: 2, line: 15-40); and

c) a UV protection layer applied as a coating to the ink receiving layer, said UV protection layer including UV absorbing latex particulates (column: 2, line: 15-40), said UV protection layer formulated to allow an ink to at least partially pass there through and become deposited on the ink receiving layer, wherein the ink receiving layer is applied at from 5 g/m^2 to 40 g/m^2 (column: 3, line: 30-35).

- A media sheet, comprising:

a) a media substrate (column: 4, line: 40-55);

b) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates (see Abstract; column: 2, line: 15-40); and

c) a UV protection layer applied as a coating to the ink receiving layer, said UV protection layer including ~~UV~~ absorbing latex particulates (column: 2, line: 45-65), said UV protection layer formulated to allow an ink to at least partially pass there through and become deposited on the ink receiving layer, wherein the UV absorbing latex particulates include at least one UV absorbing monomer, said UV absorbing monomer being an ethylenically unsaturated compound having a UV absorbing group covalently attached thereto, said UV absorbing latex particulates having a UV absorbing monomer to diluent monomer ratio from 100:0 to 10:90 by weight (see Examples).

- A media sheet, comprising:

a) a media substrate (column: 4, line: 40-55);

b) an ink receiving layer applied as a coating to at least one surface of the substrate, said ink receiving layer comprising hollow particulates (see Abstract; column: 2, line: 15-40); and

c) a UV protection layer applied as a coating to the ink receiving layer, said UV protection layer including UV absorbing latex particulates (column: 2, line: 25-35), said UV protection layer formulated to allow an ink to at least partially pass therethrough and become deposited on the ink receiving layer (see Abstract).

Wexler explicitly didn't discloses that (1) the UV protection layer includes UV absorbing latex, and have a glass transition temperature from 50 to 120 degree C. (2) The hollow particulates have a void volume from 30 to 70%. (3) The hollow particulate are from 0.3 to 5 micrometer, and have a glass transition temperature from 50 to 120 degree C. (4) The UV absorbing layer have a strong absorbance between 300 nm to 420 nm, and a lower absorbance above 420 nm.

However, Wexler teaches same polymer and copolymer material used in the UV protection layer, and the strong absorbance and the glass transition temperature is constant to the material, and Wexler clearly teaches that the ink transporting layer (UV protection layer) comprises polystyrene polymer (column: 6, line: 1-15), and it is known that the glass transition temperature of polystyrene polymer is 95 degree C. Wexler also teaches that ink receiving layer comprises polyvinyl alcohol as a hollow particulate (column: 6, line: 30-40), and it is know that the glass transition temperature of poly vinyl

alcohol is 85 degree C. Therefore, obviously Wexler teaches all limitation of the claimed application.

Warner et al. teaches that bleed free printed image, imaging layer (ink receiving) comprising hollow particulates, wherein the hollow particulate have a void volume from 20 to 80%, preferably 30 to 60% (column: 8, line: 35-40). They also teaches that the hollow particulate have particle size is from 1 to 25 micrometer (column: 6, line: 10-15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the media sheet of Wexler by the aforementioned teaching of Warner et al. in order to have bleed free high quality printed image.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Manish S. Shah
Primary Examiner
Art Unit 2853

MSS
12/18/07